



SEQUENCE LISTING

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OCT 22 2001

TECH CENTER 1600/2900

<110> MCGILL UNIVERSITY
SZYF, Moshe
BHATTACHARYA, Sanjoy K.
RAMCHANDANI, Shyam

<120> DNA DEMETHYLASE, THERAPEUTIC AND
DIAGNOSTIC USES THEREOF

<130> 1770-183 "PCT" FC/1d

<150> CA 2,220,805
<151> 1997-11-12

<150> CA 2,230,991
<151> 1998-05-11

<160> 10

<170> FastSEQ for Windows Version 3.0

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<211> 1804
<212> DNA
<213> Unknown

<220>
<223> cDNA encoding human demethylase

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<211> 411
<212> PRT
<213> Unknown

<220>
<223> predicted amino acid of human demethylase

<400> 2

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					85				90			95			
Pro	Pro	Ser	Gly	Ser	Gly	Leu	Gly	Gly	Asp	Gly	Gly	Cys	Gly		
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Lys	Glu	Glu	Val	Ile	Arg	Lys	Ser	Gly	Leu	Ser	Ala	Gly	Lys	Ser	Asp
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Leu	Pro	Lys	Gly	Leu	Gln	Gly	Val	Gly	Pro	Gly	Ser	Asn	Asp	Glu	Thr
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Thr	Gly	Gln	Val	Ser	Ala	Ala	Val	Glu	Lys	Asn	Pro	Ala	Val	Trp	Leu
					340				345			350			
Asn	Thr	Ser	Gln	Pro	Leu	Cys	Lys	Ala	Phe	Ile	Val	Thr	Asp	Glu	Asp
					355				360			365			
Ile	Arg	Lys	Gln	Glu	Glu	Arg	Val	Gln	Gln	Val	Arg	Lys	Lys	Leu	Glu
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Met Asp Ile Glu Met Asp Ser Gly Asp Glu Ala
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<210> 3
<211> 1589
<212> DNA
<213> Unknown

<220>
<223> cDNA sequence of human dMTase2

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ggacagaaca gctgcggcga gtggcggcg cggagggcg cgaatcggcg acgagccccc 180
gggtcgcaac ttgcagaagc ggccgcggcg gcccgcattgg ccacggcggg cggaaaagcc 240
ggggcgcaat ggagcggaaag aggtgggagt gcccggcgct cccgcagggc tggaaaggg 300
aagaagtgcc caggaggtcg gggctgtcg cccgcacag ggtatgtctt tactatagcc 360
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acctcagcac ctgcacttc cgacccggaa agatgttcat gaacaagatg aataagagtc 480
gccagcgtgt gcgtatgat ttttcaacc aggtcaaggg caagcctgac ctgaacacccg 540
cgctgcctgt acggcagact gcatccatct tcaagcaacc ggtgaccaag atcacaacc 600
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tctgggagaa gaagctaagt ggattgatg ccttgacat tgcagaagaa ctggtcagga 720
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cttcaataaa ctgtatggtag gaacttgg 1589

<210> 4
<211> 291
<212> PRT
<213> Unknown

<220>
<223> predicted amino acid sequence of human dMTase2

<400> 4
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Arg Glu Glu Val Pro Arg Arg Ser Gly Leu Ser Ala Gly His Arg Asp
20 25 30
Val Phe Tyr Tyr Ser Pro Ser Gly Lys Lys Phe Arg Ser Lys Pro Gln
35 40 45
Leu Ala Arg Tyr Leu Gly Gly Ser Met Asp Leu Ser Thr Phe Asp Phe
50 55 60
Arg Thr Gly Lys Met Leu Met Ser Lys Met Asn Lys Ser Arg Gln Arg
65 70 75 80

Val Arg Tyr Asp Ser Ser Asn Gln Val Lys Gly Lys Pro Asp Leu Asn
 85 90 95
 Thr Ala Leu Pro Val Arg Gln Thr Ala Ser Ile Phe Lys Gln Pro Val
 100 105 110
 Thr Lys Ile Thr Asn His Pro Ser Asn Lys Val Lys Ser Asp Pro Gln
 115 120 125
 Lys Ala Val Asp Gln Pro Arg Gln Leu Phe Trp Glu Lys Lys Leu Ser
 130 135 140
 Gly Leu Asn Ala Phe Asp Ile Ala Glu Glu Leu Val Lys Thr Met Asp
 145 150 155 160
 Leu Pro Lys Gly Leu Gln Gly Val Gly Pro Gly Cys Thr Asp Glu Thr
 165 170 175
 Leu Leu Ser Ala Ile Ala Ser Ala Leu His Thr Ser Thr Met Pro Ile
 180 185 190
 Thr Gly Gln Leu Ser Ala Ala Val Glu Lys Asn Pro Gly Val Trp Leu
 195 200 205
 Asn Thr Thr Gln Pro Leu Cys Lys Ala Phe Met Val Thr Asp Glu Asp
 210 215 220
 Ile Arg Lys Gln Glu Glu Leu Val Gln Gln Val Arg Lys Arg Leu Glu
 225 230 235 240
 Glu Ala Leu Met Ala Asp Met Leu Ala His Val Glu Glu Leu Ala Arg
 245 250 255
 Asp Gly Glu Ala Pro Leu Asp Lys Ala Cys Ala Glu Asp Asp Asp Glu
 260 265 270
 Glu Asp Glu Glu Glu Glu Glu Pro Asp Pro Asp Pro Glu Met
 275 280 285
 Glu His Val
 290

C
 <210> 5

<211> 1966

<212> DNA

<213> Unknown

<220>

<223> cDNA sequence of mouse dMTasel

<400> 5

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taagaagttc	agaagcaagc	ctcagttggc	aaggtagctg	ggaaatactg	ttgatctcag	840
cagttttgac	ttcagaactg	gaaagatgt	gcctagtaaa	ttacagaaga	acaaacagag	900
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agaacagatc	aggaattcta	aataaattt	ccagttaaag	attattgt	tttcactgt	1860
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<210> 6
<211> 414
<212> PRT
<213> Unknown

<220>
<223> predicted amino acid sequence of mouse dMTasel

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 Glu Gln Gly Gly Gln Gly Ser Ala Leu Ala Pro Ser Pro Val Ser Gly
 35 40 45
 Val Arg Arg Glu Gly Ala Arg Gly Gly Arg Gly Arg Gly Arg Trp
 50 55 60
 Lys Gln Ala Ala Arg Gly Gly Val Cys Gly Arg Gly Arg Gly Arg
 65 70 75 80
 Gly Arg
 85 90 95
 Pro Gln Ser Gly Gly Ser Gly Leu Gly Asp Gly Gly Gly Ala
 100 105 110
 Gly Gly Cys Gly Val Gly Ser Gly Gly Gly Val Ala Pro Arg Arg Asp
 115 120 125
 Pro Val Pro Phe Pro Ser Gly Ser Ser Gly Pro Gly Pro Arg Gly Pro
 130 135 140
 Arg Ala Thr Glu Ser Gly Lys Arg Met Asp Cys Pro Ala Leu Pro Pro
 145 150 155 160
 Gly Trp Lys Lys Glu Glu Val Ile Arg Lys Ser Gly Leu Ser Ala Gly
 165 170 175
 Lys Ser Asp Val Tyr Tyr Phe Ser Pro Ser Gly Lys Lys Phe Arg Ser
 180 185 190
 Lys Pro Gln Leu Ala Arg Tyr Leu Gly Asn Ala Val Asp Leu Ser Ser
 195 200 205
 Phe Asp Phe Arg Thr Gly Lys Met Met Pro Ser Lys Leu Gln Lys Asn
 210 215 220
 Lys Gln Arg Leu Arg Asn Asp Pro Leu Asn Gln Asn Lys Gly Lys Pro
 225 230 235 240
 Asp Leu Asn Thr Thr Leu Pro Ile Arg Gln Thr Ala Ser Ile Phe Lys
 245 250 255
 Gln Pro Val Thr Lys Phe Thr Asn His Pro Ser Asn Lys Val Lys Ser
 260 265 270
 Asp Pro Gln Arg Met Asn Glu Gln Pro Arg Gln Leu Phe Trp Glu Lys
 275 280 285
 Arg Leu Gln Gly Leu Ser Ala Ser Asp Val Thr Glu Gln Ile Ile Lys
 290 295 300
 Thr Met Glu Leu Pro Lys Gly Leu Gln Gly Val Gly Pro Gly Ser Asn
 305 310 315 320
 Asp Glu Thr Leu Leu Ser Ala Val Ala Ser Ala Leu His Thr Ser Ser

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Val Trp Leu Asn Thr Ser Gln Pro Leu Cys Lys Ala Phe Ile Val Thr		
355	360	365
Asp Glu Asp Ile Arg Lys Gln Glu Glu Arg Val Gln Gln Val Arg Lys		
370	375	380
Lys Leu Glu Glu Ala Leu Met Ala Asp Ile Leu Ser Arg Ala Ala Asp		
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Thr Glu Glu Val Asp Ile Asp Met Asp Ser Gly Asp Glu Ala		400
405	410	

<210> 7
<211> 2392
<212> DNA
<213> Unknown

<220>
<223> cDNA sequence of mouse dMTase2

C1
<400> 7

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<210> 8
<211> 285
<212> PRT
<213> Unknown

<220>
<223> predicted amino acid sequence of mouse dMTase2

<400> 8
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Arg Glu Glu Val Pro Arg Arg Ser Gly Leu Ser Ala Gly His Arg Asp
20 25 30
Val Phe Tyr Tyr Ser Pro Ser Gly Lys Lys Phe Arg Ser Lys Pro Gln
35 40 45
Leu Ala Arg Tyr Leu Gly Gly Ser Met Asp Leu Ser Thr Phe Asp Phe
50 55 60
Arg Thr Gly Lys Met Leu Met Asn Lys Met Asn Lys Ser Arg Gln Arg
65 70 75 80
Val Arg Tyr Asp Ser Ser Asn Gln Val Lys Gly Lys Pro Asp Leu Asn
85 90 95
Thr Ala Leu Pro Val Arg Gln Thr Ala Ser Ile Phe Lys Gln Pro Val
100 105 110
Thr Lys Ile Thr Asn His Pro Ser Asn Lys Val Lys Ser Asp Pro Gln
115 120 125
Lys Ala Val Asp Gln Pro Arg Gln Leu Phe Trp Glu Lys Lys Leu Ser
130 135 140
Gly Leu Ser Ala Phe Asp Ile Ala Glu Glu Leu Val Arg Thr Met Asp
145 150 155 160
Leu Pro Lys Gly Leu Gln Gly Val Gly Pro Gly Cys Thr Asp Glu Thr
165 170 175
Leu Leu Ser Ala Ile Ala Ser Ala Leu His Thr Ser Thr Leu Pro Ile
180 185 190
Thr Gly Gln Leu Ser Ala Ala Val Glu Lys Asn Pro Gly Val Trp Leu
195 200 205
Asn Thr Ala Gln Pro Leu Cys Lys Ala Phe Met Val Thr Asp Asp Asp
210 215 220
Ile Arg Lys Gln Glu Glu Leu Val Gln Gln Val Arg Lys Arg Leu Glu
225 230 235 240
Glu Ala Leu Met Ala Asp Met Leu Ala His Val Glu Glu Leu Ala Arg
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of the putative demethylase candidate cDNA

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of the putative demethylase candidate cDNA

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